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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,309	03/12/2004	Nobuhiro Ishizaka	00862.023514.	5783

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EXAMINER	
DICKERSON, CHAD S	
ART UNIT	PAPER NUMBER
2625	
MAIL DATE	DELIVERY MODE
07/02/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,309	ISHIZAKA ET AL.	
	Examiner	Art Unit	
	CHAD DICKERSON	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/14/2010 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 4-6 have been considered but are moot in view of the new ground(s) of rejection. The amendment to the claims has necessitated a new ground(s) of rejection. However, the references of Watanabe '289 and Casey 499 are still being applied to the claims. The Examiner believes that the claim amendment is still disclosed by the previously applied references of Iwasaki '403 and Clark '856.

The Iwasaki '403 reference discloses a RAM that holds the print buffers 618[1]. The RAM is considered as the overall print buffer with certain portions of the memory device designated for different colors. With this interpretation, it is easily seen that the first regions are comprised of column data of a predetermined column amount (e.g. four bands per buffer). These bands are also divided by color components within the RAM

[1] See Iwasaki '403 at col. 9, ll. 52-67.

device[2]. With the above mentioned information, the Examiner still believes that the claim limitations are performed.

Regarding the asserted deficiency of the Clark reference to perform the delimiter feature, the Examiner still disagrees with this allegation. In column 7, ll. 1 and 2, the passage specifically states that "*segment 711 contains zeros for the empty interval 714*". The Examiner considers the zeros as code data that are arranged in between the color elements. In addition, the DMA interrupts are also considered as coded data that provides the direct memory accessing procedure to occur in between the different color elements used in the printing process[3]. Both above examples are considered as codes that are between the color components.

Therefore, in view of the above arguments, the Examiner maintains the rejection with the previously applied references.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289 (USP 5689289) in view of Casey '499 (USP 6097499), Iwasaki '403 (USP 6328403) and Clark '856 (USP 7265856).

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[2] Id. at col. 7, ll. 56-col. 8, ll. 47.
[3] See Clark '856 at col. 6, ll. 20-col. 7, ll. 58.

Re claim 1: Watanabe '289 discloses a printing apparatus which divides a printing area in a scanning direction on a printing medium into a plurality of regions (i.e. in the system, the print head is used to print an area in a scanning direction representing multiple lines being read from a print buffer, which the multiple lines represents a plurality of regions in the document to be printed; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8) and has a print buffer, wherein the printer buffer is divided into a plurality of first regions corresponding to divided regions of the printing medium for storing column data of a plurality of predetermined column amounts (i.e. the print buffer is used to store column data that has been recently converted to vertical data and this information is then printed as it is stored in the print buffer. The printer buffer (205) contains data that contains a plurality of regions, or bit storage capacity, for the print data that contains information related to the column data that is to be printed. The print buffer stores information of the divided column information in a predetermined manner based on amount of data. The print buffer is stored in RAM (312) of the recorder (311). Here, the print buffer stores the vertical information of a plurality of column amounts; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8 and col. 11, ll. 1-46), comprising:

input means for sequentially inputting block data corresponding to the first regions and having a plurality of compressed raster data (i.e. the system contains a 4-line buffer, considered as an input means, that can store four lines of converted image data that has been decoded by a programmed process of the CPU (111). The decoded data represents data that is dot image data, considered as a raster, and this data is stored in the 4-line buffer. There are one-line representations that are decoded into a

dot image, or a raster, stored in the 4-line buffer and the 4-line buffer is able to store 4 lines, two after resolution conversion and two lines before resolution conversion. The 4-line buffer is able to then contain a plurality of rasters when storing these lines. While the receiver buffer (202) receives data of one line from the 4-line buffer, the receiver buffer receives data sequentially from the 4-line buffer if the receiver buffer is empty. Therefore, the sequential transfer of data from the 4-line buffer to the receiver buffer is performed. Also, since the image data of one line of an overall image is stored in the 4-line buffer, the divided regions of an overall image are used to be transferred to the receiver buffer. Lastly, with the data being expanded into dot image data and then, the dot image data being encoded again while being stored in the image buffer (104), this performs the feature of having dot image data, or a plurality of raster data, being encoded, or compressed; see col. 3, ln 47 – col. 5, ln 64),

wherein the block data contains a plurality of color component data (i.e. in the system, the data of the lines can be either black or white; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

acquisition means for acquiring N-bit raster data from the block data by decompressing the compressed raster data (i.e. the raster buffer, considered as the acquisition means, receives, or acquires, lines of memory with a certain bit value (8x3640 bits) from the centronics sender. Specifically mentioned in column 4, lines 6-65, the raster buffer is used to decode, or decompress, data stored on the receiver buffer (202). Also, the programmed processing of the CPU1 (111) decodes data that is stored in the image buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

conversion means for converting the raster data into column data (i.e. the horizontal-to-vertical conversion circuit performs the feature of converting the raster information into vertical, or column data; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

transfer means for sequentially transferring the raster data acquired by said acquisition means to said conversion means (i.e. once the system realizes that the raster buffer has 8 line of memory stored in the buffer, this information is sent sequentially to the horizontal-to-vertical conversion circuit. Therefore, the feature of transferring the raster data to a converter to perform column conversion is performed; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

second transfer means for sequentially transferring N column data converted by said conversion means to the print buffer (i.e. in the system, the information in the memory that was converted into vertical information is then transferred to the print buffer once 8 lines is recognized to be stored and converted in the horizontal-to-vertical converter. This performs the feature transferring the converted data to the print buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

storage means for storing the N column data transferred from said second transfer means in each second region of the print buffer (i.e. the print buffer stores the vertical, or column data, transferred from the horizontal-to-vertical converter. The print buffer has 8 lines that represent 8 separate lines or regions of the print data that is stored in the print buffer. If print data is being output from the from print buffer 1 (205),

the system then transfers column data information to be printed to the memory spaces within print buffer 2 (206); see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8); and

control means for executing transfer processing of said transfer means, transfer processing of said second transfer means, and conversion processing of said conversion means in synchronism with a predetermined signal (i.e. the CPUs (111 and 215) control the execution transferring the image data from the facsimile to the printer, transferring the image data to the raster buffer and transferring the information in the raster buffer to the horizontal-to-vertical conversion circuit. The transfers of the image data is based on the signal that represents when a buffer reaches the 8 lines of memory in the respective buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, Watanabe '289 fails to specifically teach the preamble limitation of a print buffer having a column data amount stored that is smaller than the data that may be printed through one main scan of a print head.

However, this is well known in the art as evidenced by Casey '499. Casey '499 discloses the preamble limitation of a print buffer having a column data amount stored that is smaller than the data that may be printed through one main scan of a print head (i.e. The Watanabe reference involves having the printing device being connected to an external processing apparatus (see figure 8) and the Casey reference also involves an external device (i.e. a computer) that sends information to a printing device for printing (same field of endeavor). Casey '499 performs the feature of having a data amount that

is stored in the buffer and this amount is smaller than the data amount required for a printing of one line in the main scanning direction; see column 5, lines 34-63).

Therefore, in view of Casey '499, it would have been obvious to one of ordinary skill at the time the invention was made to have the preamble feature of a column amount of the column data stored in the print buffer being smaller than a column amount of column data to be printed by one scanning, incorporated in the device of Watanabe, in order to have a minimal buffer size in the printing system, while still being able to complete a printing pass during the print process (as stated in Casey '499 col. 4, lines 5-15).

However, the combination of Watanabe '289 and Casey '499 fails to teach each first region being divided into a plurality of second regions in correspondence with the number of color components, for determining the code and storing means for storing N column data transferred on the basis of the code determined by said acquisition means.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses each first region being divided into a plurality of second regions in correspondence with the number of color components (i.e. like the Watanabe '289 and Casey '499 references, the Iwasaki '403 reference discloses a printing device receiving image information to process and print (same field of endeavor). However, in shown in figures 12, 13 and 17 are illustrated regions that require knowing the amount of a color that correspond to the print heads used in the system. Depending on the printing codes and the value analyzed from the printing codes will determine the color data that is used for printing. The first region of data that is analyzed and converted into a plurality of

color data, which are considered as the second regions, is then sent to its respective buffers in the system. The color data that is separated corresponds with the number of color components used in the image data. Although the system discloses separate buffers, the RAM in the system is interpreted as a print buffer that contains separated memory sections that accommodates the separate color components; see col. 7, line 13 – col. 11, line 56),

for determining the code (i.e. in the system of Iwasaki '403, the print codes are analyzed and are determined by the code analyzing means (616). When the codes are determined, a signal is given to the developing means to develop the data in order to be stored in the print buffers; see col. 7, line 16 – col. 11, line 56) and

storing means for storing data transferred on the basis of the code determined by said acquisition means (i.e. the system of Iwasaki discloses storing data in a storage means based on the code analyzed and determined to be a specific type of information; see col. 7, line 13 – col. 11, line 56).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of each first region being divided into a plurality of second regions in correspondence with the number of color components, for determining the code and storing means for storing data transferred on the basis of the code determined by said acquisition means, incorporated in the device of Watanabe '289, as modified by the features of Casey '499, in order to read out print data corresponding to the band position to be actually printed in units of colors (as stated in Iwasaki '961 col. 7, lines 27-65).

However, Watanabe '289 in view of Casey '499 and Iwasaki '403 fails to teach the apparatus according to claim 2, wherein the block data contains a code representing a data delimiter between first color component data and second color component data.

However, this is well known in the art as evidenced by Clark '856. Clark '856 discloses the apparatus according to claim 2, wherein the block data contains a code representing a data delimiter between first color component data and second color component data (i.e. Like the previously applied references, Clark '856 discloses the feature of having a printing device receive and process information for output (same field of endeavor). However, Clark '856 discloses using the printer firmware using the firegroup count and the offset data contained in the print header to be used to calculate the beginning and the ending of each application of color on a page. The use of these two factors serves as a data delimiter. Specifically, in figure 7, element (714) can serve as a data delimiter between two color segments. Also, DMA interrupts are used as data delimiters since these interrupts serve as a signal to the system that another color is being introduced to the memory for output; see col. 5, lines 31-61, col. 6, ll. 57-67 and col. 8, ll. 1-58).

Therefore, in view of Clark '856, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of the apparatus, wherein the block data contains a code representing a data delimiter between first color component data and second color component data, incorporated in the device of Watanabe '289, as modified by the features of Casey '499 and Iwasaki '403, in order to

calculate the beginning and the ending points for application of a color (as stated in Clark '856 col. 5, lines 31-61).

Re claim 4: The teachings of Watanabe '289, as modified by Casey '499 and Iwasaki '403, and further in view of Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 1, wherein said acquisition means outputs a second predetermined signal to said conversion means (i.e. in the system of Watanabe '289, when the CPU of the printer outputs a code to the respective buffer containing a certain amount of lines to be printed, this signal representing the memory information is output to the horizontal-to-vertical conversion means once the image information is determined to not contain all-white information and is 8 lines; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, the combination of Watanabe '289 and Casey '499 fails to teach when the code is determined.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses when the code is determined (i.e. in the system of Iwasaki '403, the print codes are analyzed and are determined by the code analyzing means (616). When the codes are determined, a signal is given to the developing means to develop the data in order to be stored in the print buffers; see col. 7, line 16 – col. 11, line 56).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of when the code is

determined in order to have print data analyzed and developed based on the analyzed print data (as stated in Iwasaki '403 col. 5, lines 1-11).

Re claim 5: The teachings of Watanabe '289 and Casey '499 are disclosed above.

Watanabe '289 the apparatus according to claim 1, wherein said conversion means comprises holding means for holding N raster data transferred from said transfer means (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), and performs longitudinal/lateral conversion processing after said holding means holds the N raster data (i.e. the horizontal-to-vertical conversion means performs the vertical conversion to the data stored in the storage part of the device and this is performed once or after the data is being presently held in the conversion device; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289, as modified by Casey '499, Iwasaki '403 and Clark '856, and further in view of Iwasaki '961 (US Pub No 2002/0175961).

Re claim 6: The teachings of Watanabe '289 in view of Casey '499, Iwasaki '403 and Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 4, wherein said conversion means comprises holding means for holding N raster data transferred from said transfer means (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), and when the second predetermined signal is input while said holding means holds M (M<N) raster data (i.e. in the system, when one line that is all white is interpreted, a signal is input into the system describing that fact. This signal occurs when the raster means is holding the a certain amount of raster information that is not greater than a certain number; (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8), sets data in said holding means (i.e. in the case when the all white data signal is input into the system, the next image data is set in the raster buffer corresponding to the area of the next line; (i.e. the horizontal-to-vertical conversion means is able to store information that was transferred from the raster buffer that was being also stored in the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8) and then performs longitudinal/lateral conversion processing (i.e. the horizontal-to-vertical conversion means performs the vertical conversion to the data stored in the storage part of the device and this is performed once or after the data is being presently held in the conversion device that was sent from the raster buffer; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, Watanabe '289 in view of Casey '499, Iwasaki '403 and Clark '856 fails to teach sets (N-M) "0" data in said holding means.

However, this is well known in the art as evidenced by Iwasaki '961. Iwasaki '961 discloses sets (N-M) "0" data in said holding means (i.e. Iwasaki '961 discloses setting data of one random number area to be 1 while setting others to be the number of zero. This is expressed in figures 7a and 7b. The mask in the RAM (604) memory is set to one, while other masks are set to zero; see figs. 7-10; paragraphs [0076]-[0086]).

Therefore, in view of Iwasaki '961, it would have been obvious to one of ordinary skill at the time the invention was made to have the feature of sets (N-M) "0" data in said holding means in order to permit or prohibit printing of a dot in a certain area of an image (as stated in Iwasaki '961 paragraph [0078]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Nohata '656 (USP 6111656) discloses an image communication apparatus that is able to acquire image data information and transfers the information within the equipment through several buffers and units for conversion before printing the image data.

8. Yamada (USP 6339480) discloses a printer driver for a color printer and the system comprises a raster to column conversion, a compression and a decompression of the raster data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAD DICKERSON whose telephone number is (571)270-1351. The examiner can normally be reached on 9:30-6:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Haskins can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CHAD DICKERSON
Examiner
Art Unit 2625

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